STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

JOHN ELIAS BALDACCI
GOVERNOR

DAWN R. GALLAGHER
COMMISSIONER

September 7, 2005

Ms. Christina Therrien
Manager
Town of Machias
P.O. Box 418
Machias, ME 04654

RE: Maine Pollutant Discharge Elimination System (MEPDES) Permit #ME0100323
Maine Waste Discharge License (WDL) Application #W002674-5L-D-R
Final MEPDES Permit/WDL

Dear Ms. Therrien:

Enclosed, please find a copy of your **final** MEPDES permit and Maine WDL which was approved by the Department of Environmental Protection. This permit for your facility replaces National Pollutant Discharge Elimination System (NPDES) permit #ME0100323 last issued for your facility by the Environmental Protection Agency (USEPA) on April 27, 2000. Please read the permit and its attached conditions carefully. You must follow the conditions in the order to satisfy the requirements of law. Any discharge not receiving adequate treatment is in violation of State law and is subject to enforcement action.

Any interested person aggrieved by a Department determination made pursuant to applicable regulations, may appeal the decision following the procedures described in the attached DEP FACT SHEET entitled "*Appealing a Commissioner's Licensing Decision.*"

We would like to make you aware of the fact that your monthly Discharge Monitoring Reports (DMRs) may not reflect the revisions in this permitting action for several months, however you are required to report applicable test results for parameters required by this MEPDES permit/WDL that do not appear on the DMR. Please see attached April 2003 O&M Newsletter article regarding this matter.

If you have any questions regarding the matter, please feel free to call me at 287-7659.

Sincerely,

Bill Hinkel
Division of Water Resource Regulation
Bureau of Land and Water Quality

Enc.

cc: Annaleis Hafford, Olver Assoc., Inc.
Clarissa Trasko, DEP
Roger Janson, USEPA
Jeff Murphy, NOAA, NMFS

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STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION
STATE HOUSE STATION 17 AUGUSTA, MAINE 04333

DEPARTMENT ORDER

IN THE MATTER OF

TOWN OF MACHIAS	) MAINE POLLUTANT DISCHARGE
PUBLICLY OWNED TREATMENT WORKS	) ELIMINATION SYSTEM PERMIT
MACHIAS, WASHINGTON COUNTY	) AND
#ME0100323	) WASTE DISCHARGE LICENSE
#W002674-5L-D-R **APPROVAL**	) **RENEWAL**

Pursuant to the provisions of the Federal Water Pollution Control Act, Title 33 USC, §1251, *et seq.*, and Maine law, 38 M.R.S.A., §414-A *et seq.*, and applicable regulations, the Department of Environmental Protection (Department) has considered the application of the TOWN OF MACHIAS (Town), with its supportive data, agency review comments, and other related materials on file and FINDS THE FOLLOWING FACTS:

APPLICATION SUMMARY

The Town has applied to the Department for renewal of Waste Discharge License (WDL) #W002674-5L-B-R, which was issued on May 22, 2000 and expired on May 22, 2005. The WDL authorized the monthly average discharge of up to 0.37 million gallons per day (MGD) of secondary treated sanitary wastewater from a publicly owned treatment works (POTW), as well as the discharge of an unspecified quantity of excess combined sanitary and storm water during wet weather events from two (2) combined sewer overflow (CSO) outfalls to the Machias River, Class SB, in Machias, Maine.

On January 12, 2001, the Department received authorization from the U.S. Environmental Protection Agency (USEPA) to administer the National Pollutant Discharge Elimination System (NPDES) permit program in Maine, excluding areas of special interest to Maine Indian Tribes. From that point forward, the program has been referred to as the Maine Pollutant Discharge Elimination System (MEPDES) permit program, and permit #ME0100323 (same as NPDES permit number) will be utilized as the primary reference number.

PERMIT SUMMARY

This permitting action is similar to the 5/22/00 licensing action in that it is:

1. Carrying forward the monthly average discharge flow limitation of 0.37 MGD and daily maximum discharge flow reporting requirement;

2. Carrying forward the monthly average, weekly average and daily maximum technology-based concentration and mass limits for biochemical oxygen demand (BOD_5) and total suspended solids (TSS);

3. Carrying forward the daily maximum technology-based concentration limitation for settleable solids;

4. Carrying forward the monthly average and daily maximum concentration limitations for fecal coliform bacteria;

5. Carrying forward the technology-based monthly average and water quality-based daily maximum concentration limits for total residual chlorine (TRC);

6. Carrying forward the daily maximum water quality-based concentration and mass limits for total copper;

7. Carrying forward surveillance and screening level whole effluent toxicity (WET) and chemical-specific testing requirements; and

8. Carrying forward the minimum monitoring frequency requirements for all monitored parameters, except settleable solids and fecal coliform bacteria.

This permitting action is different from the 5/22/00 licensing action in that it is:

1. Establishing a requirement to achieve a minimum 30-day average of 85 percent removal for BOD_5 and TSS;

2. Revising the pH range limitation to 6.0 – 9.0 standard units;

3. Requiring the submission of a revised Operation and Maintenance (O&M) manual for Department review and comment;

4. Requiring the submission of a revised Wet Weather Management Plan for Department review and comment;

5. Requiring the submission of annual reports, for Department review and comment, to address copper toxicity reduction efforts;

6. Revising the minimum monitoring frequency requirement for settleable solids from once per week to once per day and fecal coliform bacteria from once per week to three times per week based on the results of facility testing;

7. Revising the sample type for total copper from "grab" to "24-hour composite;" and

8. Revising the limit for disposal of septage in the wastewater treatment facility from 1,500 gallons per day to 2,000 gallons per day following completion of the proposed aeration system upgrades.

CONCLUSIONS

BASED on the findings in the attached Fact Sheet dated September 5, 2005, and subject to the Conditions listed below, the Department makes the following CONCLUSIONS:

1. The discharge, either by itself or in combination with other discharges, will not lower the quality of any classified body of water below such classification.

2. The discharge, either by itself or in combination with other discharges, will not lower the quality of any unclassified body of water below the classification which the Department expects to adopt in accordance with State law.

3. The provisions of the State's antidegradation policy, 38 M.R.S.A. §464(4)(F), will be met, in that:

   (a) Existing in-stream water uses and the level of water quality necessary to protect and maintain those existing uses will be maintained and protected;

   (b) Where high quality waters of the State constitute an outstanding national resource, that water quality will be maintained and protected;

   (c) The standards of classification of the receiving water body are met or, where the standards of classification of the receiving water body are not met, the discharge will not cause or contribute to the failure of the water body to meet the standards of classification;

   (d) Where the actual quality of any classified receiving water body exceeds the minimum standards of the next highest classification that higher water quality will be maintained and protected; and

   (e) Where a discharge will result in lowering the existing water quality of any water body, the Department has made the finding, following opportunity for public participation, that this action is necessary to achieve important economic or social benefits to the State.

4. The discharges (including the two CSO points) will be subject to effluent limitations that require application of best practicable treatment as defined in Maine law, 38 M.R.S.A., §414-A(1)(D).

ACTION

THEREFORE, the Department APPROVES the above noted application of the TOWN OF MACHIAS to discharge a monthly average flow of up to 0.37 MGD of secondary treated sanitary wastewater and an unspecified quantity of untreated excess combined sanitary and storm water from two (2) combined sewer overflow (CSO) points during wet weather events to the Machias River, Class SB, in Machias, Maine, SUBJECT TO THE ATTACHED CONDITIONS, and all applicable standards and regulations including:

1. "Maine Pollutant Discharge Elimination System Permit Standard Conditions Applicable To All Permits," revised July 1, 2002, copy attached.

2. The attached Special Conditions, including any effluent limitations and monitoring requirements.

3. The expiration date of this permit is five (5) years from the date of signature below.

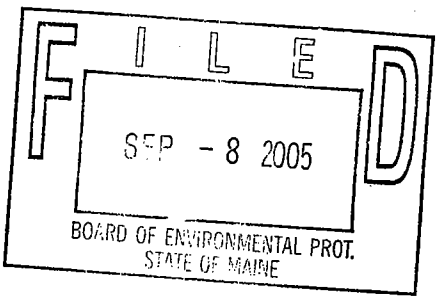
DONE AND DATED AT AUGUSTA, MAINE, THIS 6TH DAY OF SEPTEMBER, 2005.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: _____ for
DAWN R. GALLAGHER, Commissioner

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: April 4, 2005
Date of application acceptance: April 4, 2005



Date filed with Board of Environmental Protection: _____

This Order prepared by William F. Hinkel, BUREAU OF LAND & WATER QUALITY
#ME0100323 / #W002674-5L-D-R September 5, 2005

SPECIAL CONDITIONS

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning the effective date of this permit and lasting through permit expiration, the permittee is authorized to discharge **secondary treated sanitary wastewater from Outfall #001A** to the Machias River. Such discharges shall be limited and monitored by the permittee as specified below[1]:

Effluent Characteristic	Discharge Limitations						Minimum Monitoring Requirements	
	Monthly Average	Weekly Average	Daily Maximum	Monthly Average	Weekly Average	Daily Maximum	Measurement Frequency	Sample Type
	as specified	as specified	as specified	as specified	as specified	as specified	as specified	as specified
Flow *[50050]*	0.37 MGD *[03]*	--	Report MGD *[03]*	--	--	--	Continuous *[99/99]*	Recorder *[RC]*
BOD_5 *[00310]*	93 lbs./day *[26]*	139 lbs./day *[26]*	154 lbs./day *[26]*	30 mg/L *[19]*	45 mg/L *[19]*	50 mg/L *[19]*	1/Week *[01/07]*	24-Hour Composite *[24]*
BOD_5 Percent Removal[2] *[81010]*	---	---	---	85% *[23]*	---	---	1/Month *[01/30]*	Calculate *[CA]*
TSS *[00530]*	93 lbs./day *[26]*	139 lbs./day *[26]*	154 lbs./day *[26]*	30 mg/L *[19]*	45 mg/L *[19]*	50 mg/L *[19]*	1/Week *[01/07]*	24-Hour Composite *[24]*
TSS Percent Removal[2] *[81011]*	---	---	---	85% *[23]*	---	---	1/Month *[01/30]*	Calculate *[CA]*
Settleable Solids *[00545]*	--	--	--	--	--	0.3 ml/L *[25]*	1/Day *[01/01]*	Grab *[GR]*
Fecal Coliform Bacteria[3] *[31616]*	--	--	--	15/100 ml[4] *[13]*	--	50/100 ml *[13]*	3/Week *[03/07]*	Grab *[GR]*
Total Residual Chlorine[5] *[50060]*	--	--	--	0.1 mg/L *[19]*	--	0.17 mg/L *[19]*	1/Day *[01/01]*	Grab *[GR]*
Total Copper *[01042]*	--	--	0.12 lbs./day *[26]*	--	--	56 µg/L *[28]*	1/Quarter *[01/90]*	24-Hour Composite *[24]*
pH *[00400]*	--	--	--	--	--	6.0 – 9.0 SU *[12]*	1/Day *[01/01]*	Grab *[GR]*

The italicized numeric values bracketed in the table and in subsequent text are code numbers that Department personnel utilize to code the monthly Discharge Monitoring Reports.

FOOTNOTES: See Pages 7 and 8 of this permit for applicable footnotes.

SPECIAL CONDITIONS

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

2. During the period beginning the effective date of this permit and lasting through permit expiration for **Outfall #001A**, the permittee shall conduct WET and chemical-specific testing as follows:

Whole Effluent Toxicity (WET) [6]	**Daily Maximum**	**Minimum Monitoring Frequency**	**Sample Type**
Acute No Observed Effect Level (A-NOEL)			
Invertebrate-**Mysid Shrimp** (*Mysidopsis bahia*) *[TDA3E]*	Report % *[23]*	1/Year *[01/YR]*	Composite *[24]*
Vertebrate-**Inland Silverside** (*Menidia beryllina*) *[TDA6B]*	Report % *[23]*	1/Year *[01/YR]*	Composite *[24]*
Chronic No Observed Effect Level (C-NOEL)			
Invertebrate-**Sea Urchin** (*Arbacia punctulata*) *[TBH3A]*	Report % *[23]*	1/Year *[01/YR]*	Composite *[24]*
Vertebrate-**Inland Silverside** (*Menidia beryllina*) *[TBP6B]*	Report % *[23]*	1/Year *[01/YR]*	Composite *[24]*
Chemical-Specific[7] *[50008]*	Report ug/L *[28]*	1/Year *[01/YR]*	Composite/Grab *[24/GR]*

The italicized numeric values bracketed in the table and in subsequent text are code numbers that Department personnel utilize to code the monthly Discharge Monitoring Reports.

FOOTNOTES: See Pages 7 and 8 of this permit for applicable footnotes.

SPECIAL CONDITIONS

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

FOOTNOTES:

1. **Monitoring – Influent monitoring shall be conducted at a location following the grit tank and prior to entering the wet well as described in Section 2(e) of the accompanying Fact Sheet. All effluent monitoring shall be conducted at a location following the last treatment unit in the treatment process as to be representative of end-of-pipe effluent characteristics. Effluent monitoring shall be conducted at the effluent end of the chlorine contact chamber following dechlorination.** Any change in sampling location must be approved by the Department in writing. Sampling and analysis must be conducted in accordance with: a) methods approved by 40 Code of Federal Regulations (CFR) Part 136; b) alternative methods approved by the Department in accordance with the procedures in 40 CFR Part 136; or c) as otherwise specified by the Department. Samples that are sent out for analysis shall be analyzed by a laboratory certified by the State of Maine's Department of Human Services.

2. **Percent Removal** – The treatment facility shall maintain a minimum of 85 percent removal of both biochemical oxygen demand and total suspended solids for all flows receiving secondary treatment. The percent removal shall be calculated based on influent and effluent concentration values. The percent removal shall be waived when the monthly average influent concentration is less than 200 mg/L.

3. **Bacteria Limits** – Fecal coliform bacteria limits and monitoring requirements are in effect year-round at the request of the Maine Department of Marine Resources in order to protect local shellfish resources.

4. **Bacteria Reporting** – The monthly average fecal coliform bacteria limitation is a geometric mean limitation and sample results shall be reported as such.

5. **TRC Monitoring** – Monitoring for TRC is only required when elemental chlorine or chlorine-based compounds are in use for effluent disinfection. For instances when a facility has not disinfected with chlorine-based compounds for an entire reporting period, the facility shall report "NODI-9" for this parameter on the monthly DMR.

6. **Whole Effluent Toxicity (WET) Testing** – Definitive WET testing is a multi-concentration testing event (a minimum of five dilutions bracketing the critical modified acute and chronic thresholds of 7.8% and 0.95%, respectively), which provides a point estimate of toxicity in terms of No Observed Effect Level, commonly referred to as NOEL or NOEC. A-NOEL is defined as the acute no observed effect level with survival as the end point. C-NOEL is defined as the chronic no observed effect level with survival, reproduction and growth as the end points.

SPECIAL CONDITIONS

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

FOOTNOTES:

Beginning on the effective date of this permit and lasting through permit expiration, the permittee shall conduct WET testing at a minimum frequency of once per year (1/Year) in a different calendar quarter for each testing event such that at least one test is conducted in all four quarters. Acute tests shall be conducted on the mysid shrimp (*Mysidopsis bahia*) and the inland silverside *(Menidia beryllina)*. Chronic tests shall be conducted on the inland silverside and on the sea urchin (*Arbacia punctulata).* Results shall be submitted within 30 days of receiving the results from the laboratory conducting the testing.

The permittee is also required to analyze the effluent for the parameters specified in the analytic chemistry on the form in Attachment A of this permit every time a WET test is performed for compliance with this permit.

Toxicity tests must be conducted by an experienced laboratory approved by the Department. The laboratory must follow procedures as described in the following USEPA methods manuals.

a. Short Term Methods for Estimating the Chronic Toxicity of Effluent and Receiving Water to Marine and Estuarine Organisms, Fifth Edition, October 2002, EPA-821-R-02-014.

b. Methods for Measuring the Acute Toxicity of Effluent and Receiving Waters to Freshwater and Marine Organisms, Third Edition, October 2002, EPA-821-R-02-012.

6. **Chemical-Specific Testing** – Priority pollutants (chemical-specific testing pursuant to Department rule Chapter 530.5) are those parameters listed by the USEPA pursuant to Section 307(a) of the Clean Water Act and published at 40 CFR Part 122, Appendix D, Tables II and III.

Beginning on the effective date of this permit and lasting through permit expiration, the permittee shall conduct chemical-specific testing at a minimum frequency of once per year (1/Year) in a different calendar quarter for each testing event.

Chemical-specific testing shall be conducted on samples collected at the same time as those collected for whole effluent toxicity tests, when applicable. Chemical-specific testing shall be conducted using methods that permit detection of a pollutant at existing levels in the effluent or that achieve minimum reporting levels of detection as specified by the Department. Results shall be submitted to the Department within thirty (30) days of the permittee receiving the data report from the laboratory conducting the testing. **For the purposes of Discharge Monitoring Report (DMR) reporting, enter a "1" for *yes, testing done this monitoring period* or "NODI-9" *monitoring not required this period.***

All mercury sampling shall be conducted in accordance with EPA's "clean sampling techniques" found in EPA Method 1669, Sampling Ambient Water For Trace Metals At EPA Water Quality Criteria Levels. All mercury analysis shall be conducted in accordance with EPA Method 1631, Determination of Mercury in Water by Oxidation, Purge and Trap, and Cold Vapor Fluorescence Spectrometry.

SPECIAL CONDITIONS

B. NARRATIVE EFFLUENT LIMITATIONS

1. The effluent shall not contain a visible oil sheen, foam or floating solids at any time which would impair the usages designated by the classification of the receiving waters.

2. The effluent shall not contain materials in concentrations or combinations which are hazardous or toxic to aquatic life, or which would impair the usages designated by the classification of the receiving waters.

3. The discharges shall not cause visible discoloration or turbidity in the receiving waters which would impair the usages designated by the classification of the receiving waters.

4. Notwithstanding specific conditions of this permit the effluent must not lower the quality of any classified body of water below such classification, or lower the existing quality of any body of water if the existing quality is higher than the classification.

C. DISINFECTION

If chlorination is used as the means of disinfection, an approved chlorine contact tank providing the proper detention time consistent with good engineering practice must be utilized followed by a dechlorination system if the imposed total residual chlorine (TRC) limit cannot be achieved by dissipation in the detention tank. The total residual chlorine in the effluent shall at no time cause any demonstrable harm to aquatic life in the receiving waters. The dose of chlorine applied shall provide a TRC concentration that will effectively reduce fecal coliform bacteria levels to or below those specified in Special Condition A, "*Effluent Limitation and Monitoring Requirements*," above.

D. TREATMENT PLANT OPERATOR

The treatment facility must be operated by a person holding a minimum of a **Grade II** certificate pursuant to Title 32 M.R.S.A. §4171 et seq. All proposed contracts for facility operation by any person must be approved by the Department before the permittee may engage the services of the contract operator.

E. LIMITATIONS FOR INDUSTRIAL USERS

Pollutants introduced into the waste water collection and treatment system by a non-domestic source (user) shall not pass through or interfere with the operation of the treatment system.

SPECIAL CONDITIONS

F. MONITORING AND REPORTING

Monitoring results obtained during the previous month shall be summarized for each month and reported on separate Discharge Monitoring Report (DMR) forms provided by the Department and **postmarked on or before the thirteenth (13th) day of the month or hand-delivered to the Department's Regional Office such that the DMR's are received by the Department on or before the fifteenth (15th) day of the month** following the completed reporting period. A signed copy of the DMR and all other reports required herein shall be submitted to the following address:

Department of Environmental Protection
Eastern Maine Regional Office
Bureau of Land and Water Quality
Division of Engineering, Compliance and Technical Assistance
106 Hogan Road
Bangor, Maine 04401

G. NOTIFICATION REQUIREMENT

In accordance with Standard Condition D, the permittee shall notify the Department of the following.

1. Any introduction of pollutants into the wastewater collection and treatment system from an indirect discharger in a primary industrial category discharging process wastewater; and

2. Any substantial change in the volume or character of pollutants being introduced into the wastewater collection and treatment system by a source introducing pollutants into the system at the time of permit issuance. For the purposes of this section, notice regarding substantial change shall include information on:

   (a) the quality and quantity of wastewater introduced to the wastewater collection and treatment system; and

   (b) any anticipated impact caused by the change in the quantity or quality of the wastewater to be discharged from the treatment system.

H. UNAUTHORIZED DISCHARGES

The permittee is authorized to discharge only in accordance with the terms and conditions of this permit and only from Outfall #001A (secondary treated wastewater) and the two (2) combined sewer overflow outfalls (Outfall #002 and Outfall #003) listed in Special Condition L, *Combined Sewer Overflows,* of this permit. Discharges of wastewater from any other point source are not authorized under this permit, and shall be reported in accordance with Standard Condition B(5), *Bypasses*, of this permit.

SPECIAL CONDITIONS

I. WET WEATHER FLOW MANAGEMENT PLAN

On or before March 1, 2006, the permittee shall submit to the Department for review and approval, a new or revised Wet Weather Management Plan ***[PCS Code 06799]*** that conforms to Department guidelines for such plans. The revised plan shall include operating procedures for a range of intensities, address solids handling procedures (including septic waste and other high strength wastes if applicable) and provide written operating and maintenance procedures during the events.

The treatment facility staff shall develop and maintain a Wet Weather Management Plan to direct the staff on how to operate the facility effectively during periods of high flow. The Department acknowledges that the existing collection system may deliver flows in excess of the monthly average design capacity of the treatment plant during periods of high infiltration and rainfall.

The permittee shall review the plan at least annually and record any necessary changes to keep the plan up to date. Any changes to the plans must be submitted to the Department for review and approval.

J. OPERATION & MAINTENANCE (O&M) PLAN

On or before March 1, 2006, the permittee shall submit to the Department a current written comprehensive Operation & Maintenance (O&M) Plan ***[PCS Code 09699].*** The plan shall provide a systematic approach by which the permittee shall at all times, properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit.

By December 31 of each year, or within 90 days of any process changes or minor equipment upgrades, the permittee shall evaluate and modify the O&M Plan including site plan(s) and schematic(s) for the wastewater treatment facility to ensure that it is up-to-date. The O&M Plan shall be kept on-site at all times and made available to Department and USEPA personnel upon request.

Within 90 days of completion of new and or substantial upgrades of the wastewater treatment facility, the permittee shall submit the updated O&M Plan to their Department inspector for review and comment.

SPECIAL CONDITIONS

K. DISPOSAL OF SEPTAGE WASTE IN WASTEWATER TREATMENT FACILITY

Beginning on the effective date of this permit and lasting through the successful installation and start-up of the proposed aeration system upgrade, the permittee is authorized to receive and introduce into the treatment process or solids handling or treatment plant process up to **a maximum of 1,500 gallons per day** of septage. **Beginning upon completion of the aeration system upgrade, as described in Fact Sheet Section 2(e), and lasting through permit expiration**, the permittee is authorized to receive and introduce into the treatment process or solids handling or treatment plant process up to **a maximum of 2,000 gallons per day** of septage. This authorization is subject to the following terms and conditions:

1. This approval is limited to methods and plans described in the application and supporting documents. Any variations are subject to review and approval prior to implementation.

2. At no time shall the addition of septage cause or contribute to effluent quality violations. If such conditions do exist, the introduction of septage into the treatment process or solids handling stream shall be suspended until effluent quality can be maintained.

3. The permittee shall maintain records which shall include, as a minimum, the following by date: volume of septage received, source of the septage (name of municipality), the hauler transporting the septage, the dates and volume of septage added to the waste water treatment influent and test results.

4. The addition of septage into the treatment process or solids handling stream shall not cause the treatment facilities design capacity to be exceeded. If, for any reason, the treatment process or solids handling facilities become overloaded, introduction of septage into the treatment process or solids handling stream shall be reduced or terminated in order to eliminate the overload condition.

5. Septage known to be harmful to the treatment processes shall not be accepted. Wastes that contain heavy metals, toxic chemicals, extreme pH, flammable or corrosive materials in concentrations harmful to the treatment operation shall be refused.

6. Holding tank waste water shall not be recorded as septage but should be reported in the treatment facility's influent flow.

7. During wet weather flows, no septage shall be added to the treatment process or solids handling facilities.

SPECIAL CONDITIONS

L. CONDITIONS FOR COMBINED SEWER OVERFLOWS (CSOs)

1. Pursuant to Chapter 570 of Department Rules, *Combined Sewer Overflow Abatement*, the permittee is authorized to discharge from the following locations of CSOs (stormwater and sanitary wastewater) subject to the conditions and requirements herein.

Outfall #	Location	Receiving Water & Class
002	Siphon Chamber South Side Machias River	Machias River, SB
003	Adjacent to Plant via Outfall #001A	Machias River, SB

2. Prohibited Discharges

   a) The discharge of dry weather flows is prohibited. All such discharges shall be reported to the Department in accordance with Standard Condition D (1) of this permit.

   b) No discharge shall occur as a result of mechanical failure, improper design or inadequate operation or maintenance.

   c) No discharges shall occur at flow rates below the maximum design capacities of the wastewater treatment facility, pumping stations or sewerage system.

3. Narrative Effluent Limitations

   a) The effluent shall not contain a visible oil sheen, settled substances, foam, or floating solids at any time that impair the characteristics and designated uses ascribed to the classification of the receiving waters.

   b) The effluent shall not contain materials in concentrations or combinations that are hazardous or toxic to aquatic life; or which would impair the usage designated by the classification of the receiving waters.

   c) The discharge shall not impart color, turbidity, toxicity, radioactivity or other properties that cause the receiving waters to be unsuitable for the designated uses and other characteristics ascribed to their class.

   d) Notwithstanding specific conditions of this permit, the effluent by itself or in combination with other discharges shall not lower the quality of any classified body of water below such classification, or lower the existing quality of any body of water if the existing quality is higher than the classification.

SPECIAL CONDITIONS

L. CONDITIONS FOR COMBINED SEWER OVERFLOWS (CSOs) (cont'd)

4. CSO Master Plan (see Sections 2 and 3 of Chapter 570 Department rules)

   The permittee shall implement CSO control projects in accordance with the approved CSO Master Plan entitled *Sewer System Master Plan For CSO Abatement and Treatment Plant Expansion, Town of Machias, Maine October, 2000*, prepared by Olver Associates and the abatement schedule contained in William Olver's November 12, 2003 letter to the Department.

   On or before December 31, 2005, ***[PCS Code 04599]*** the permittee shall substantially complete construction of the CSO sewer remediation work identified in the Master Plan as the Meader Farm, Harwood, Bedford, and Fremont projects.

   On or before November 30, 2007, ***[PCS Code 04599]*** the permittee shall substantially complete construction of the CSO sewer remediation work identified in the Master Plan as the Water, West, Center and Court streets projects

   On or before December 31, 2009, ***[PCS Code 06699]*** the permittee shall submit a CSO Master Plan Update for review and approval to the Department.

   To modify the dates and or projects specified above, the permittee must file an application with the Department to formally modify the permit. The remaining work items identified in the abatement schedule may be amended from time to time based on mutual agreements between the permittee and the Department. The permittee must notify the Department in writing prior to any proposed changes to the implementation schedule.

5. Nine Minimum Controls (NMC) (see Section 5 Chapter 570 of Department rules)

   The permittee shall implement and follow the Nine Minimum Controls documentation as approved by the USEPA on May 29, 1997. Work preformed on the Nine Minimum Controls during the year shall be included in the annual *CSO Progress Report* (see below).

6. CSO Compliance Monitoring Program (see Section 6 Chapter 570 of Department rules)

   The permittee shall conduct flow monitoring according to an approved *Compliance Monitoring Program* on all CSO points, as part of the CSO Master Plan. Annual flow volumes for all CSO locations shall be determined by actual flow monitoring, by estimation using a model such as USEPA's Storm Water Management Model (SWMM) or by some other estimation technique approved by the Department.

   Results shall be submitted annually as part of the annual *CSO Progress Report* (see below), and shall include annual precipitation, CSO volumes (actual or estimated) and any block test data required. Any abnormalities during CSO monitoring shall also be reported. The results shall be reported on the Department form *"CSO Activity and Volumes"* (Attachment B of this permit) or similar format and submitted to the Department on diskette.

SPECIAL CONDITIONS

L. CONDITIONS FOR COMBINED SEWER OVERFLOWS (CSOs) (cont'd)

CSO control projects that have been completed shall be monitored for volume and frequency of overflow to determine the effectiveness of the project toward CSO abatement. This requirement shall not apply to those areas where complete separation has been completed and CSO outfalls have been eliminated.

7. Additions of New Wastewater (see Section 8 Chapter 570 of Department rules)

Chapter 570, Section 8, lists requirements relating to any proposed addition of wastewater to the combined sewer system. Documentation of the new wastewater additions to the system and associated mitigating measures shall be included in the annual *CSO Progress Report* (see below). Reports must contain the volumes and characteristics of the wastewater added or authorized for addition and descriptions of the sewer system improvements and estimated effectiveness.

8. Annual CSO Progress Reports (see Section 7 of Chapter 570 of Department rules)

By March 1 of each year, the permittee shall submit *CSO Progress Reports* covering the previous calendar year (January 1 to December 31) ***[PCS Code 11099]***. The CSO Progress Report shall include, but is not necessarily limited to, the following topics as further described in Chapter 570: CSO abatement projects, schedule comparison, progress on inflow sources, costs, flow monitoring results, CSO activity and volumes, nine minimum controls update, sewer extensions, and new commercial or industrial flows.

The CSO Progress Reports shall be completed on a standard form entitled *"Annual CSO Progress Report,"* furnished by the Department, and submitted in electronic form, if possible, to the following address:

CSO Coordinator
Department of Environmental Protection
Bureau of Land and Water Quality
Division of Engineering, Compliance and Technical Assistance
17 State House Station
Augusta, Maine 04333-0017
e-mail: CSOCoordinator@maine.gov

9. Signs

If not already installed, the permittee shall install and maintain an identification sign at each CSO location as notification to the public that intermittent discharges of untreated sanitary wastewater occur. The sign must be located at or near the outfall and be easily readable by the public. The sign shall be a minimum of 12" X 18" in size with white lettering against a green background and shall contain the following information:

TOWN OF MACHIAS
WET WEATHER
SEWAGE DISCHARGE
CSO # AND NAME

SPECIAL CONDITIONS

M. COPPER TOXICITY REDUCTION REPORTING

On or before December 31st of each year and lasting through permit expiration, the permittee shall submit annual reports to the Department, for review and comment, which identifies continuing efforts by the Town to reduce the effluent levels of total copper to levels that are equivalent to or less than the effluent limits established in this permit.

N. REOPENING OF PERMIT FOR MODIFICATIONS

Upon evaluation of the tests results or monitoring requirements specified in Special Conditions of this permitting action, new site specific information, or any other pertinent test results or information obtained during the term of this permit, the Department may, at any time and with notice to the permittee, modify this permit to: (1) include effluent limits necessary to control specific pollutants or whole effluent toxicity where there is a reasonable potential that the effluent may cause water quality criteria to be exceeded; (2) require additional effluent or ambient water quality monitoring if results on file are inconclusive; or (3) change monitoring requirements or limitations based on new information.

O. SEVERABILITY

The invalidity or unenforceability of any provision, or part thereof, of this permit shall not affect the remainder of the provision or any other provisions. This permit shall be construed and enforced in all respects as if such invalid or unenforceable provision or part thereof had been omitted.

ATTACHMENT A

MARINE WHOLE EFFLUENT TOXICITY (WET) TEST REPORT

Facility _____ DEP License No _____ NPDES permit No _____

Contact person _____ Telephone No _____

Date initially sampled _____ (mm/dd/yy) Date tested _____ (mm/dd/yy) Chlorinated? _____

Test type screening _____ surveillance _____ Dechlorinated? _____

Test required by: DEP/EPA

Results % effluent

	Mysid shrimp	sea urchin	silverside
LC50			
A-NOEL			
C-NOEL			

Receiving Water Concentration

A-NOEL	
C-NOEL	

Data summary

	Mysid shrimp	sea urchin	silver side		
	% survival	% fertilized	% survival		final wt (mg)
QC standard	A>90	>70	A>90	C>80	>0.50
lab control					
receiving water contrl					
conc. 1 (%)					
conc. 2 (%)					
conc. 3 (%)					
conc. 4 (%)					
conc. 5 (%)					
conc. 6 (%)					
stat test used					

place * next to values statistically different from controls

Reference toxicant

	Mysid shrimp		sea urchin	silver side	
	LC50/A-NOEL	C-NOEL	LC50/A-NOEL	C-NOEL	
toxicant /date					
limits (mg/l)					
results (mg/l)					

Salinity Adjustment

brine	
sea salt	
other	

Comments _____

Laboratory Conducting Tests. To the best of my knowledge this information is true, accurate, and complete

signature _____ company _____

printed name _____ address _____

tel. no. _____

Report analytical chemistry on reverse side.

ANALYTICAL CHEMISTRY RESULTS
MARINE WATERS

Date collected _____ mm/dd/yy

Date analyzed _____ mm/dd/yy

Lab ID No. _____

Analyte	Report Units	Results receiving water	Results effluent	Detection level	Method
Ammonia nitrogen	µg/L			µg/L	
Salinity	ppt			ppt	
Total residual oxidants	mg/L			mg/L	
Total organic carbon	mg/L			mg/L	
Total solids	mg/L			mg/L	
Total suspended solids	mg/L			mg/L	
Total aluminum	µg/L			µg/L	
Total cadmium	µg/L			µg/L	
Total chromium	µg/L			µg/L	
Total copper	µg/L			µg/L	
Total lead	µg/L			µg/L	
Total nickel	µg/L			µg/L	
Total zinc	µg/L			µg/L	
other (pH)	S.U.			S.U.	
other ( )					

Comments

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Laboratory conducting test. To the best of my knowledge this information is true, accurate, and complete

signature		lab name	
printed name		address	
tel. no.			

ATTACHMENT B

ATTACHMENT B
MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION
CSO ACTIVITY AND VOLUMES

MUNICIPALITY OR DISTRICT	MEPDES / NPDES PERMIT NO.
REPORTING YEAR	SIGNED BY:
YEARLY TOTAL PRECIPITATION INCHES	DATE:

CSO EVENT NO.	START DATE OF STORM	PRECIP. DATA		FLOW DATA (GALLONS PER DAY) OR BLOCK ACTIVITY("1")							
		TOTAL INCHES	MAX. HR. INCHES	LOCATION: NUMBER:	LOCATION: NUMBER:	LOCATION: NUMBER:	LOCATION: NUMBER:	LOCATION: NUMBER:	LOCATION: NUMBER:	EVENT OVERFLOW GALLONS	EVENT DURATION HRS
1											
2											
3											
4											
5											
6											
7											
8											
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											
21											
22											
23											
24											
25											
	TOTALS										

Note 1: Flow data should be listed as gallons per day. Storms lasting more than one day should show total flow for each day.

Note 2: Block activity should be shown as a "1" if the block floated away.

MAINE POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT
AND
WASTE DISCHARGE LICENSE

FACT SHEET

Date: **SEPTEMBER 5, 2005**

MEPDES PERMIT: **#ME0100323**
WASTE DISCHARGE LICENSE: **#W002674-5L-D-R**

NAME AND ADDRESS OF APPLICANT:

TOWN OF MACHIAS
WASTEWATER TREATMENT FACILITY
P.O. BOX 418
MACHIAS, ME 04654

COUNTY: **WASHINGTON**

NAME AND ADDRESS WHERE DISCHARGE OCCURS:

TOWN OF MACHIAS WASTEWATER TREATMENT FACILITY
LOWER MAIN STREET
MACHIAS, ME 04654

AND

COMBINED SEWER OVERFLOW (CSO) OUTFALLS:

Outfall #	Location	Receiving Water & Class
002	Siphon Chamber South Side Machias River	Machias River, SB
003	Adjacent to Plant via Outfall #001A	Machias River, SB

RECEIVING WATER / CLASSIFICATION: **MACHIAS RIVER / CLASS SB**

COGNIZANT OFFICIAL AND TELEPHONE NUMBER: **MS. CHRISTINA THERRIEN**
TOWN MANAGER
(207) 374-2281

1. APPLICATION SUMMARY

Application: The Town of Machias (Town) has applied to the Department for renewal of Waste Discharge License (WDL) #W002674-5L-B-R, which was issued on May 22, 2000 and expired on May 22, 2005. The WDL authorized the monthly average discharge of up to 0.37 million gallons per day (MGD) of secondary treated sanitary wastewater from a publicly owned treatment works (POTW), as well as the discharge of an unspecified quantity of untreated combined sanitary and storm water during wet weather events from two (2) combined sewer overflow (CSO) outfalls to the Machias River, Class SB, in Machias, Maine.

2. PERMIT SUMMARY

a. Regulatory: On January 12, 2001, the Department received authorization from the U.S. Environmental Protection Agency (USEPA) to administer the National Pollutant Discharge Elimination System (NPDES) permit program in Maine, excluding areas of special interest to Maine Indian Tribes. On October 30, 2003, after consultation with the U.S. Department of Justice, the USEPA extended Maine's NPDES program delegation to all but tribally owned lands. In those areas, the Department maintains the authority to issue WDLs pursuant to Maine law. The extent of Maine's delegated authority is under appeal at the time of this permitting action. From that point forward, the program has been referred to as the Maine Pollutant Discharge Elimination System (MEPDES) program and permit #ME0100323 (same as NPDES permit number) will be utilized as the primary reference number for the Town of Machias' MEPDES permit.

b. Terms and Conditions: **This permitting action is similar to the 5/22/00 licensing action in that it is:**

1. Carrying forward the monthly average discharge flow limitation of 0.37 MGD and daily maximum discharge flow reporting requirement;

2. Carrying forward the monthly average, weekly average and daily maximum technology-based concentration and mass limits for biochemical oxygen demand (BOD_5) and total suspended solids (TSS);

3. Carrying forward the daily maximum technology-based concentration limitation for settleable solids;

4. Carrying forward the monthly average and daily maximum concentration limitations for fecal coliform bacteria;

5. Carrying forward the technology-based monthly average and water quality-based daily maximum concentration limits for total residual chlorine (TRC);

6. Carrying forward the daily maximum water quality-based concentration and mass limits for total copper;

7. Carrying forward surveillance and screening level whole effluent toxicity (WET) and chemical-specific testing requirements; and

8. Carrying forward the minimum monitoring frequency requirements for all monitored parameters, except settleable solids and fecal coliform bacteria.

2. PERMIT SUMMARY (cont'd)

This permitting action is different from the 5/22/00 licensing action in that it is:

1. Establishing a requirement to achieve a minimum 30-day average of 85 percent removal for BOD_5 and TSS;

2. Revising the pH range limitation to 6.0 – 9.0 standard units;

3. Requiring the submission of a revised Operation and Maintenance (O&M) manual for Department review and comment;

4. Requiring the submission of a revised Wet Weather Management Plan for Department review and comment;

5. Requiring the submission of annual reports, for Department review and comment, to address copper toxicity reduction efforts;

6. Revising the minimum monitoring frequency requirement for settleable solids from once per week to once per day and fecal coliform bacteria from once per week to three times per week based on the results of facility testing;

7. Revising the sample type for total copper from "grab" to "24-hour composite;" and

8. Revising the limit for disposal of septage in the wastewater treatment facility from 1,500 gallons per day to 2,000 gallons per day following completion of the proposed aeration system upgrades.

c. Facility History: This section provides a summary of significant licensing/permitting actions that have been completed for the Machias Wastewater Treatment Facility (WWTF).

April 27, 2000 – The USEPA issued NPDES permit #ME0100323 to the Town for the monthly average discharge of up to 0.37 MGD of secondary treated sanitary wastewater and an unspecified quantity of untreated combined sanitary and storm water via two combined sewer overflow (CSO) points to the Machias River in Machias. The 4/27/00 permit superseded previous NPDES permits issued on June 3, 1993, December 30, 1987, and January 7, 1983.

May 22, 2000 – The Department issued WDL #W002674-5L-B-R to the Town for the monthly average discharge of up to 0.37 MGD of secondary treated sanitary wastewater and an unspecified quantity of untreated combined sanitary and storm water via two combined sewer overflow (CSO) points to the Machias River in Machias. The 5/22/00 WDL superseded WDL #W002674-59-A-R issued on June 22, 1988 and WDL #2674 issued on June 22, 1983. The 5/22/00 WDL expired on May 22, 2005.

2. PERMIT SUMMARY (cont'd)

October 2000 – A Master Plan document prepared by Olver Associates, Inc. and entitled, "*Sewer System Master Plan For CSO Abatement and Treatment Plant Expansion, Town of Machias, Maine*" was submitted to the Department and the USEPA for review and approval. The Master Plan assessed a full range of abatement alternatives, taking into consideration technical, environmental, and economic factors, and provided for on-going compliance monitoring to be done during implementation of recommended abatement measures.

August 11, 2000 – Pursuant to Maine law, 38 M.R.S.A. §420 and §413 and Department rule, 06-096 CMR Chapter 519, *Interim Effluent Limitations and Controls for the Discharge of Mercury*, the Department issued a *Notice of Interim Limits for the Discharge of Mercury* to the permittee thereby administratively modifying WDL #W002674-5L-B-R by establishing interim monthly average and daily maximum effluent concentration limits of 19.3 parts per trillion (ppt) and 29.0 ppt, respectively, and a minimum monitoring frequency requirement of 4 tests per year for mercury. It is noted that the mercury effluent limitations have not been incorporated into Special Condition A, *Effluent Limitations And Monitoring Requirements*, of this permit as the limits and monitoring frequencies are regulated separately through Maine law, 38 M.R.S.A. §420, §413 and Department rule Chapter 519. The interim mercury limits remain in effect and enforceable and modifications to the limits and/or monitoring frequencies will be formalized outside of this permitting document.

November 12, 2002 – The Town submitted a revised CSO schedule.

January 29, 2003 – The Town completed the installation of a new alarm system at the siphon chamber pump station and put the system into operation.

April 24, 2003 – The Department issued a Notice of Violation (NOV) to the Town for violations of BOD, TSS, settleable solids, TRC, and fecal coliform effluent limits established in WDL #W002674-5L-B-R and other conditions applicable to the WDL. The Town responded to the NOV in a letter dated May 12, 2003.

December 18, 2003 – The CSO Master Plan and Schedule were approved by the Department.

July 20, 2004 – The Department requested the Town submit a toxicity reduction evaluation (TRE) plan to the Department, for review and approval, by September 1, 2004 to address continuing exceedances of the effluent copper limits established in WDL #W002674-5L-B-R. The Town's consulting engineer, Olver Associates, Inc., responded to the Department's 7/20/04 request by requesting an extension on the TRE submission date to October 31, 2004. The Department did not grant a submission extension.

September 22, 2004 – The Department issued a letter to the Town in which the facility inspector requested that the Town immediately increase the fecal coliform bacteria sampling frequency from once per week to three times per week based on mechanical problems associated with the disinfection chemical feed pumps.

2. PERMIT SUMMARY (cont'd)

November 8, 2004 – Olver Associates, Inc. submitted a letter including a TRE to the Department, for review and approval, to identify and propose mitigation of sources of copper in the final effluent. The TRE identified leaching of copper from the drinking water distribution system as the primary source of elevated copper in the wastewater. The distribution system is owned and operated by Machias Water Company, a private company with no municipal affiliation. Olver Associates, Inc. identified that the concentration of copper in the raw ground water source wells (10 ppb, parts per billion) used by Machias Water Company does not exceed the human health-based standard of 1.3 ppm (parts per million); consequently, Machias Water Company is not obligated to treat potable water for copper reduction/removal. The Town proposes to negotiate copper effluent limits with the Department based on proposed changes to the ambient water quality criteria (AWQC) for copper.

December 21, 2004 – The Department responded to the Town's 11/8/04 letter and TRE proposal stating that re-examination of the effluent limits for copper *"is the best approach as long as the acute copper criterion is changed"* and further stated that *"if the new acute copper criterion is not adopted, the focus should be examining the dilution ratio and looking for source reduction opportunities."* As of the effective date of this permitting action, however, the AWQC for copper has not been revised and the Town, therefore, is subject to existing AWQC for copper.

January 12, 2005 – The Department issued a Letter of Warning (LOW) to the Town for violations of TRC, pH and fecal coliform bacteria effluent limitations that occurred between May 2004 and November 2004. The LOW identified operator error as causation for the violations and requested that the Town submit a letter to the Department by February 4, 2005, which details the Town's plan to address circumstances resulting in the violations. The Department's 1/12/05 LOW followed a previous LOW issued to the Town on March 23, 2004 for additional violations caused by operator error. In the 3/23/04 LOW, the Department requested that the Town provide training to the treatment plant operators to ensure they have familiarity with proper treatment plant operations and license conditions. The Town responded by establishing a training schedule for the assistant operator.

April 4, 2005 – The Town submitted a General Application for renewal of WDL #W002674-5L-B-R. The application was accepted for processing on April 4, 2005, and assigned WDL #W002674-5L-C-R/MEPDES permit #ME0100323.

d. Source Description: The Town of Machias owns and operates a municipal wastewater treatment facility, which is located on Lower Main Street in Machias, for the treatment of waste waters generated by approximately 600 domestic, commercial and industrial users within the Town of Machias. Wastewater entering the facility is primarily of domestic and commercial origin, with the exception of the Maine Wild Blueberry Company (MWBC), which went on-line in 1984 contributing fruit processing waste waters to the influent. The USEPA has not promulgated national pretreatment standards or effluent guidelines for the blueberry processing industry. However, the Town implemented a pretreatment agreement with MWBC in calendar year 1994 to ensure that the high-strength influent did not cause pass-through or interference with the treatment facility. The Town and MWBC are currently working on revised local limits that are appropriate for the discharge following completion of a project to upgrade the existing aeration system. The Town reports that the proposed aeration system upgrade will increase the influent BOD loading design capacity from

2. PERMIT SUMMARY (cont'd)

600 lbs./day to 1,200 lbs./day and is anticipated to be completed by December 31, 2005. Based on the Town's general application for permit renewal, 300 lbs./day of BOD loading will be allocated to MWBC following completion of the aeration upgrade. The only other significant user is the University of Maine at Machias. The Town did not provide data to characterize the flow rate from the University.

The Town's sewer collection system consists of approximately seven miles of interceptor and gravity sewers and an inverted siphon chamber containing a comminutor and no pump stations. The interceptor sewers were constructed in the early 1970s and primarily of asbestos cement (AC) material. The system was modified again in the 1980s to reduce inflow and infiltration. There are currently two (2) remaining combined sewer overflow (CSO) points associated with the collection system, which are identified in Special Condition L, *Conditions For Combined Sewer Overflows (CSOs),* of this permit.

The interceptor system is divided into two basic components: the North Shore and South Shore subareas. The North Shore interceptor collects sewerage from the northern side of the community based on a dividing line established by the Machias River. The majority of the collection system is located on the north side of the community. The South Shore interceptor collects sewerage from the south side of the river, including contributions from the Maine Wild Blueberry Company, the University of Maine, and the shopping centers located on U.S. Route 1. A portion of the system on the south side of town is privately owned and consists of older vitrified clay pipe.

It is noted that a review of discharge flow data reported between February 2000 and January 2005 indicates that the flow discharged by the Town has exceeded 80% of the permitted flow limit for a period of at least three consecutive months on six occasions. Standard Condition D(5)(b) requires the permittee to submit to the Department a projection of loadings up to the time when the design capacity of the treatment facility will be reached and a program for maintaining satisfactory treatment levels.

The previous licensing action authorized the Town to receive and introduce into the Town's treatment process or sludge handling stream a maximum of up to 1,500 gallons per day (GPD) of septage wastes from local haulers. Pursuant to Chapter 555, *Standards for the Addition of Septage to Waste Water Treatment Facilities,* and based on a written Septage Management Plan dated, March 31, 2005, this permitting action is authorizing the Town to receive and introduce into the treatment process or sludge handling stream a maximum of up to 2,000 gallons per day (GPD) of septage wastes from local haulers. The increase from 1,500 GPD to 2,000 GPD is based on additional treatment capacity afforded by completion of the aeration system upgrade project. A septage receiving manhole is located on the west side of the control building adjacent to the driveway.

A map showing the location of the treatment facility, Outfall #001A and the two remaining CSO outfall points is included as Fact Sheet Attachment A.

2. PERMIT SUMMARY (cont'd)

e. Wastewater Treatment: The Town provides a secondary level of treatment via an activated sludge treatment process with extended aeration. The original plant was constructed in 1975 to treat an average daily flow of 0.300 MGD. The facility underwent major modifications in 1989 to improve the operating conditions of the facility. The average daily influent design capacity was increased to 0.370 MGD with the addition of new, more efficient secondary clarifiers and improved sludge handling facilities.

The collection system transports wastewater to the facility headworks structure, which consists of a comminutor and a manual bypass bar rack, a 5,275-gallon capacity aerated grit chamber, a grit removal pump, and a cyclone grit classifier. Except for when the comminutor is down for service, it operates continuously. The influent flows by gravity into an influent wet well and from there the wastewater is pumped directly to two (2) aeration tanks, which each has a capacity of 0.155 MGD. It is noted that the aeration system is scheduled to be upgraded by December 31, 2005 to increase the BOD design capacity from 600 lbs./day to 1,200 lbs./day. Following aeration, the wastewater enters a flow splitter box and is equally distributed to two (2) 32-foot diameter, 12-foot deep circular secondary clarifiers. Each clarifier has a design capacity of 0.072 MGD. Settled sludge from both clarifiers is either returned to the process as activated sludge or is pumped to a 20,350-gallon capacity sludge thickening tank. The thickened secondary sludge is transferred to an aerated sludge digester tank, which has a capacity of 0.15 MGD. From the digester, sludge is pumped to a 20,345-gallon lime mix tank where lime is added to achieve a pH of 12 SU. Effluent exits the clarifiers through two 24-inch diameter lines and is conveyed to a 10,000-gallon capacity chlorine contact chamber where sodium hypochlorite and sodium bisulfite are added to disinfection and dechlorination, respectively.

Final effluent is conveyed for discharge to the Machias River via an 18-inch diameter outfall pipe that, according to Town records, extends approximately 300 linear feet into the receiving water from the spring high tide level to a depth of approximately three (3) feet below the surface of the water at mean low tide. The outfall pipe is not fitted with a diffuser or other mechanism to enhance mixing of the effluent with the receiving water. The mixing characteristics of the effluent with the receiving water have not been determined.

A schematic of the wastewater treatment process is included as Fact Sheet Attachment B.

3. CONDITIONS OF PERMIT

Maine law, 38 M.R.S.A. §414-A, requires that the effluent limitations prescribed for discharges, including, but not limited to, effluent toxicity, require application of best practicable treatment (BPT), be consistent with U.S. Clean Water Act, and ensure that the receiving waters attain the State water quality standards as described in Maine's Surface Water Classification System. In addition, 38 M.R.S.A. §420, and Department Rule Chapter 530.5, *Surface Water Toxics Control Program,* requires the regulation of toxic substances at the levels set forth for Federal Water Quality Criteria as published by the U.S. Environmental Protection Agency pursuant to the Clean Water Act.

4. RECEIVING WATER QUALITY STANDARDS

Maine law, 38 M.R.S.A. §469 classifies all estuarine and marine waters lying within the boundaries of the State and which are not otherwise classified, which includes the Machias River at the point of discharge, as Class SB waters. Maine law, 38 M.R.S.A. §465-B(2) describes the standards for Class SB waters.

5. RECEIVING WATER QUALITY CONDITIONS

The State of Maine 2004 Integrated Water Quality Monitoring and Assessment Report, prepared pursuant to Sections 303(d) and 305(b) of the Federal Water Pollution Control Act, lists the Machias River (Waterbodies 709-1 and 709-6) as, *"Category 2: Estuarine and Marine Waters Attaining Some Designated Uses – Insufficient Information for Other Uses"* and *"Category 4-B-2 Estuarine and Marine Waters Impaired by Bacteria from Combined Sewer Overflows (TMDL Required Only if Control Plans are Insufficient)."* The Town has developed and implemented a CSO Master Plan for the elimination of all CSO points associated with the Machias WWTF collection system. As the Machias WWTF and the sewer collection system are upgraded and maintained in accordance with the CSO Master Plan and Nine Minimum Controls, there should be reductions in the frequency and volume of CSO activities and, over time, improvement in the quality of the wastewater discharged to the receiving waters and improvements in receiving water quality.

The Maine Department of Marine Resources (DMR) assesses information on shellfish growing areas to ensure that shellfish harvested are safe for consumption. The DMR has authority to close shellfish harvesting areas wherever there is a pollution source, a potential pollution threat, or poor water quality. The DMR traditionally closes shellfish harvesting areas if there are known sources of discharges with unacceptable bacteria levels (instream thresholds established in the National Shellfish Sanitation Program) or maintains shellfish harvesting closure areas due to lack of updated information regarding ambient water quality conditions. In addition, the DMR prohibits shellfish harvesting in the immediate vicinity of all wastewater treatment outfall pipes as a precautionary measure in the event of a failure in the treatment plant's disinfection system. Thus, shellfish harvesting area #C55 is closed to the harvesting of shellfish due to insufficient or limited ambient water quality data to determine that the area meets the standards in the National Shellfish Sanitation Program. The shellfish closure area is identified on the map included as Fact Sheet Attachment A. The Department is making the determination that compliance with the fecal coliform bacteria and other secondary wastewater treatment limits established in this permitting action ensure that the discharge of secondary treated wastewater from the DECF will not cause or contribute to the failure of the receiving waters to meet the standards of its designated classification or to the closure of the shellfish harvesting area.

6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS

a. Flow: The previous permitting action established a monthly average discharge flow limitation of 0.37 MGD based on the dry weather design capacity of the treatment works, which is being carried forward in this permitting action along with a "continuous recorder" monitoring requirement.

6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS (cont'd)

b. Dilution Factors: Department rule, 06-096 CMR Chapter 530.5(D)(3)(b)(ii), *Surface Water Toxics Control Program*, states that, *"for discharges to estuaries, dilution must be calculated using a method determined by the Department to be appropriate for the site conditions."* Prior to issuance of the previous waste discharge license for the Machias WWTF, the Department had determined that dilution factors associated with the discharge from the Machias WWTF should be based on the 1Q10 and 7Q10 stream design flows rather than the CORMIX model due to potential inaccuracies associated with using the CORMIX model resulting from the outfall configuration and ambient receiving water conditions. Therefore, this permitting action is calculating dilution factors associated with the discharge from the Machias WWTF as follows:

Acute: 1Q10 = 27.2 cfs $\Rightarrow$ $\frac{(27.2 \text{ cfs})(0.6464) + 0.37 \text{ MGD}}{0.37 \text{ MGD}} = 48.5:1$

Mod. Acute: ¼ Q10 = 6.8 cfs $\Rightarrow$ $\frac{(6.8 \text{ cfs})(0.6464) + 0.37 \text{ MGD}}{0.37 \text{ MGD}} = 12.9:1$

Chronic: 7Q10 = 60.0 cfs $\Rightarrow$ $\frac{(60.0 \text{ cfs})(0.6464) + 0.37 \text{ MGD}}{0.37 \text{ MGD}} = 105.8:1$

Harmonic Mean[1]: 7Q10 = 180.0 cfs $\Rightarrow$ $\frac{(180.0 \text{ cfs})(0.6464) + 0.37 \text{ MGD}}{0.37 \text{ MGD}} = 315.5:1$

Chapter 530.5(D)(4)(a) states:

> *Analyses using numerical acute criteria for aquatic life must be based on ¼ of the 1Q10 stream design flow to prevent substantial acute toxicity within any mixing zone, according to EPA's Mixing Zone Policy and to ensure a Zone of Passage of at least ¾ of the cross-sectional area of any steam as required by Department rule. Where it can be demonstrated that a discharge achieves rapid and complete mixing with the receiving water, by way of an efficient diffuser or other effective method, analyses may use a greater proportion of the stream design, up to and including all of it, as long as the Zone of Passage is maintained.*

The Department has determined that, for a significant period of time at low slack tide, there is no velocity and rapid/complete mixing of the effluent with the receiving water does not occur. Therefore, the Department is utilizing ¼ of the 1Q10 stream design flow in acute evaluations as required by Chapter 530.5 of the Department's rules.

[1] The harmonic mean dilution factor is approximated by multiplying the chronic dilution factor by three (3). This multiplying factor is based on guidelines for estimation of human health dilution presented in the USEPA publication, *"Technical Support Document for Water Quality-Based Toxics Control"* (Office of Water; EPA/505/2-90-001, page 88), and represents an estimation of harmonic mean flow on which human health dilutions are based in a riverine 7Q10 flow situation.

6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS (cont'd)

c. Biochemical Oxygen Demand (BOD_5) and Total Suspended Solids (TSS): The previous licensing action established monthly average and weekly average BOD_5 & TSS concentration limits of 30 mg/L and 45 mg/L, respectively, that were based on secondary treatment requirements of the Clean Water Act of 1977 §301(b)(1)(B), as defined in 40 CFR 133.102, and Department rule, 06-096 CMR Chapter 525(3)(III). The previous permitting action also established a daily maximum BOD_5 & TSS concentration limit of 50 mg/L based on a Department best professional judgement of best practicable treatment (BPT). All three concentration limits are being carried forward in this permitting action. The previous permitting action established monthly average, weekly average, and daily maximum mass limits of 93 lbs./day and 139 lbs./day, and 154 lbs./day, respectively, which are being carried forward in this permitting action and were derived as follows:

Monthly Average Mass Limit: (30 mg/L)(8.34 lbs./gallon)(0.37 MGD) = 93 lbs./day
Weekly Average Mass Limit: (45 mg/L)(8.34 lbs./day)(0.37 MGD) = 139 lbs./day
Daily Maximum Mass Limit: (50 mg/L)(8.34 lbs./day)(0.37 MGD) = 154 lbs./day

This permitting action is also establishing a new requirement for a minimum of 85% removal of BOD_5 & TSS pursuant to Chapter 525(3)(III)(a)(3) and (b)(3) of the Department's rules.

This permitting action is carrying forward the minimum monitoring frequency requirement of once per week (1/Week) for BOD_5 & TSS based on Department guidance for POTWs permitted to discharge between 0.1 and 0.5 MGD.

d. Settleable Solids: The previous licensing action established a daily maximum technology-based concentration limit of 0.3 ml/L for settleable solids, which is being carried forward in this permitting action as it is considered by the Department as BPT for secondary treated wastewater. This permitting action is revising the minimum monitoring frequency requirement for settleable solids from once per week to once per day (1/Day) based on Department guidance for POTWs permitted to discharge between 0.1 and 0.5 MGD.

e. Fecal Coliform Bacteria: The previous licensing action established year-round monthly average and daily maximum water quality-based concentration limits of 15 colonies/100 ml (geometric mean) and 50 colonies/100 ml (instantaneous level), respectively, for fecal coliform bacteria based on the National Shellfish Sanitation Program and a minimum monitoring frequency requirement of once per week. On September 22, 2004, the Department issued a letter to the Town requesting that the Town increase the bacteria sampling rate from once per week to three times per week (3/Week) based on several instances of non-compliance with the numeric limits and problems with the disinfection chemical feed pumps. This permitting action is carrying forward the monthly average and daily maximum concentration limits based on the National Shellfish Sanitation Program, and is revising (formalizing) the minimum monitoring frequency requirement to three times per week (3/Week). The Town indicated that the sodium hypochlorite and sodium bisulfite feed rates were recently evaluated and new pumps purchased to ensure there is disinfection and dechlorination capacity for all operating conditions.

6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS (cont'd)

f. Total Residual Chlorine (TRC): The previous licensing action established technology-based monthly average and water quality-based daily maximum concentration limits of 0.1 mg/L and 0.17 mg/L, respectively, and a minimum monitoring frequency requirement of once per day for TRC. Limitations on TRC are specified to ensure that ambient water quality standards are maintained and that BPT technology is being applied to the discharge. Department permitting actions impose the more stringent of either a water quality-based or BPT-based limit. With dilution factors as determined above, end-of-pipe (EOP) water quality-based concentration thresholds for TRC may be calculated as follows:

Acute (A) Criterion	Chronic (C) Criterion	Modified A & C Dilution Factors	Calculated Acute Threshold	Calculated Chronic Threshold
0.013 mg/L	0.0075 mg/L	12.9:1 (Mod. A) 105.8:1 (C)	0.17 mg/L	0.80 mg/L

The Department has established a daily maximum BPT limitation of 1.0 mg/L for facilities that disinfect their effluent with elemental chlorine or chlorine-based compounds. For facilities that need to dechlorinate the discharge in order to meet water quality based thresholds, the Department has established daily maximum and monthly average BPT limits of 0.3 mg/L and 0.1 mg/L, respectively. The Town dechlorinates the effluent prior to discharge in order to consistently achieve compliance with the daily maximum water quality-based TRC limit. The calculated acute water quality-based threshold of 0.17 mg/L is more stringent than the daily maximum technology-based standard of 0.3 mg/L and is therefore being carried forward in this permitting action. The monthly average technology-based standard of 0.1 mg/L is more stringent than the calculated chronic water quality-based threshold of 0.80 mg/L and is therefore being carried forward in this permitting action. This permitting action is carrying forward the minimum monitoring frequency of once per day (1/Day) based on Department guidance for POTWs permitted to discharge between 0.1 and 0.5 MGD.

g. pH: The previous licensing action established a pH range limit of 6.0 – 8.5 standard units (SU), considered by the Department at the time as BPT for secondary treated wastewater and a minimum monitoring frequency requirement of once per day. Pursuant to a new Department rule found at Chapter 525(3)(III)(c), the pH range limitation is being revised to 6.0 – 9.0 SU, which is now considered BPT for secondary treated wastewater. This permitting action is carrying forward the minimum monitoring frequency requirement of once per day (1/Day) based on Department guidance for POTWs permitted to discharge between 0.1 and 0.5 MGD.

h. Whole Effluent Toxicity (WET) and Chemical Specific Testing: Maine law, 38 M.R.S.A., §414-A and §420, prohibit the discharge of effluents containing substances in amounts that would cause the surface waters of the State to contain toxic substances above levels set forth in Federal Water Quality Criteria as established by the USEPA. Department rule, 06-096 CMR Chapter 530.5, *Surface Water Toxics Control Program*, set forth ambient water quality criteria (AWQC) for toxic pollutants and procedures necessary to control levels of toxic pollutants in surface waters.

6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS (cont'd)

WET monitoring is required to assess and protect against impacts upon water quality and designated uses caused by the aggregate effect of the discharge on specific aquatic organisms. Acute WET tests are performed on invertebrate species mysid shrimp (*Mysidopsis bahia*) and vertebrate species inland silverside (*Menidia beryllina*). Chronic WET tests are performed on sea urchin (*Arbacia punctulata*) and inland silverside. Chemical-specific monitoring is required to assess the levels of individual toxic pollutants in the discharge, comparing each pollutant to acute, chronic, and human health water quality criteria.

Pursuant to criteria established in Department rule Chapter 530.5, the Machias WWTF has been placed in the low frequency category for WET testing, as the facility has a dilution ratio of greater than 100:1 and is free of the defining characteristics of discharges in the high and medium frequency groups, and in the low frequency category for chemical-specific testing, as the facility does not fall into the high or medium frequency groups.

The previous licensing action established surveillance and screening level testing frequencies of once per year for WET and chemical-specific testing based on the criteria at Chapter 530.5(6)(a) and (b).

Protocol F(9) of a document entitled *Maine Department of Environmental Protection, Toxicity Program Implementation Protocols*, dated July 1998, ("toxics protocol") states *"facilities with all dilution factors equal to or greater than 20:1 and no reasonable potential over a full five year cycle may receive a reduction to one round of screening testing for the complete suite of chemical specific priority pollutants and acute and chronic WET tests for all required species (all screening testing must be completed in the screening year)."* The toxics protocol also states that *"facilities with any dilution factor less than 20:1 and no reasonable potential over a full five year testing cycle may have surveillance testing reduced to once per year."* The Department has determined that the modified acute (¼ 1Q10) dilution factor associated with the discharge is 12.9:1; therefore, the Machias facility does not qualify for a waiver from surveillance level testing. The Machias facility falls into the low frequency WET and chemical-specific testing category and the test schedules specified by Chapter 530.5(B)(6) specify that surveillance level testing shall be conducted at a minimum frequency of once per year, which is equivalent to the minimum testing frequency for facilities that qualify for reduced testing. Hence, the Machias facility does not qualify for a reduction in testing frequency below the once per year frequency established in this permitting action.

Department rule Chapter 530.5 and protocol E(1) of the toxics protocol states that statistical evaluations shall be periodically performed on the most recent 60 months of WET and chemical-specific data for a given facility to determine if water quality based limitations must be included in the permit.

A review of the WET and chemical-specific test results on file indicates the Town has performed five (5) acute only (LC50) WET tests and five (5) acute and chronic no observed effect level (NOEL) WET tests and five (5) chemical-specific tests within the last 60 months, which satisfies the requirements imposed by the previous licensing action. See Attachment C of this Fact Sheet for a summary of the WET test results and Attachment D of this Fact Sheet for a summary of the chemical specific test dates.

6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS (cont'd)

On August 31, 2005 the Department performed a statistical evaluation on the aforementioned tests results in accordance with the statistical approach outlined in the USEPA's March 1991 document entitled, *Technical Support Document (TSD) for Water Quality Based Toxics Control*, Chapter 3.3.2, and with the *Toxicity Program Implementation Protocols*.

The 8/31/05 statistical evaluation indicates that the discharge does not exceed or have a reasonable potential (RP) to exceed acute (7.8%) or chronic (0.95%) critical ambient water quality criteria thresholds for any of the WET species tested to date.

The 8/31/05 statistical evaluation indicates that the discharge exceeds the (modified) acute ambient water quality criterion threshold for total copper. The evaluation indicates that the discharge does not exceed or have a reasonable potential to exceed the AWQC for any other chemical or compound tested to date.

Total Copper Evaluation. The previous licensing action established daily maximum, water quality-based concentration and mass limits of 56 µg/L (parts per billion) and 0.12 lbs./day, respectively, for total copper based on a determination that the effluent exceeded or had a reasonable potential to exceed the ambient water quality criteria (AWQC) for copper. In accordance with the requirements of Chapter 530.5(C)(3), the previous licensing action also established a requirement for the Town to submit a toxicity reduction evaluation (TRE) plan within thirty (30) days of the effective date (May 22, 2000) of the license. On November 8, 2004, the Town's consulting engineer, Olver Associates, Inc. submitted a letter report to the Department, for review and comment, that included a TRE for copper. The letter report identified that corrosion within the drinking water distribution system was the source of elevated copper in the effluent. The report further identified that a private company, Machias Water Company, owns and operates the distribution system and that the copper level in the raw ground production wells is below the allowable USEPA drinking water standard of 1.3 mg/L. As a result, the report identified that the Machias Water Company is not obligated to treat the water supply for copper.

The report identified six (6) options the Town could exercise to mitigate elevated copper levels including: 1) negotiation of copper effluent limits based on current AWQC; 2) review of existing outfall mixing characteristics; 3) conduct an aquatic study of the outfall area; 4) provide source water treatment technology; 5) add diffusers to the treatment plant outfall structure; and 6) extend the outfall to deeper water. Of the six options identified, the report recommended that the Town negotiate effluent copper limits with the Department. Negotiations, however, are based on proposed changes to the AWQC for copper. As of the effective date of this permitting action, the Maine Board of Environmental Protection (BEP) has not adopted new AWQC for copper. Therefore, effluent limitations established in the previous licensing action and that are being carried forward in this permitting action are based on current acute AWQC of 2.90 µg/L. Chapter 530.5(C)(2) states, *"appropriate water quality based effluent limits must be established in the license if a discharge contains pollutants that are, or may be discharged at levels that cause, have a reasonable potential to cause, or contribute to an ambient excursion in excess of a numeric or narrative water quality criterion."* Neither Maine law nor Department rule authorizes the Department to establish effluent limitations or schedules of compliance for new, water quality-based effluent limits based on proposed changes to legislation. It is noted, however, that the permittee may request that the Department reopen this permit in accordance with Special Condition N, to evaluate effluent limits

6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS (cont'd)

for copper and other parameters following the adoption of new standards by the BEP. Hence, the Department must evaluate appropriate water quality-based copper limits based on existing AWQC.

On August 31, 2005, the Department conducted a statistical evaluation of the most recent 60 months of total copper effluent data on file for the Machias WWTF pursuant to Department rule Chapter 530.5. The 6/27/05 statistical evaluation indicates that the discharge exceeded the modified acute (¼ 1Q10) AWQC threshold for copper on one (1) occasion. The data indicate no reasonable potential to exceed or exceedances of the chronic AWQC. A summary of the Department's evaluation follows.

Acute and chronic mass-based loading limits for total copper, which are used to determine whether the discharge exceeds the AQWC, may be calculated as follows:

Mass Limit Formula = (permitted flow)(dilution factor)(AWQC)(conversion factor)

$$\text{Modified Acute Copper Mass Limit} = \frac{(0.37\ \text{MGD})(12.9)(2.9\ \mu\text{g/L})(8.34\ \text{lbs./gallon})}{1{,}000\ \mu\text{g/mg}} = \textbf{0.12 lbs./day}$$

$$\text{Chronic Copper Mass Limit} = \frac{(0.37\ \text{MGD})(105.8)(2.9\ \mu\text{g/L})(8.34\ \text{lbs./gallon})}{1{,}000\ \mu\text{g/mg}} = \textbf{0.95 lbs./day}$$

The 12/12/2000 copper test result of 53.0 µg equates to a mass loading of 0.28 lbs./day, which exceeds the (modified) acute mass-based copper loading limit of 0.12 lbs./day, and is considered an exceedence of the acute AWQC for copper.

Mass loading limits were derived using the following equation:

(reported total daily flow from 12/12/00, MGD)(test result, mg/L)(8.34 lbs./gallon)

Mass loading based on 12/12/00 test result of 53.0 µg/L:

(0.632 MGD)(0.053 mg/L)(8.34 lbs./gallon) = **0.28 lbs./day**

Therefore, pursuant to Chapter 530.5(C)(2) and (C)(3), this permitting action is carrying forward the daily maximum, water quality-based end-of-pipe (EOP) concentration and mass limits of 56 µg/L and 0.12 lbs./day, respectively, which were derived as follows:

Total Copper Concentration and Mass Limits

EOP Concentration Threshold Formula= (Criteria)(Dilution Factor)

Acute (Daily Max.) EOP Copper Concentration Threshold = (2.9 µg/L)(12.9) = 37.4 µg/L

6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS (cont'd)

The USEPA's *Technical Support Document For Water Quality Based Toxics Control*, (March 1991) (TSD hereinafter), Chapter 5, Section 5.7 recommends that permit limits on both mass and concentration be specified for effluents discharging into waters with less than 100 fold dilution to ensure attainment of water quality standards. So as not to penalize facilities for operating at flows less than the permitted design flow of the waste water treatment plant, the TSD recommends allowing the concentration based limits to vary in accordance with flow reductions. In addition, 40 CFR, Part 133.101(f) authorizes a permit/license writer to increase the calculated end-of-pipe (EOP) concentrations limits by a factor of 1.5 which represents effluent concentration limits that are achievable through proper operation and maintenance of the treatment plant. This factor of 1.5 is shown in the sample calculation below.

EOP Concentration Limit Formula = (EOP Concentration Threshold)(1.5)

Daily Max. EOP Copper Concentration Limit = (37.4 µg/L)(1.5) = **56 µg/L**

$$\text{Daily Max. Copper Mass Limit} = \frac{(37.4\ \mu g/L)(8.34\ \text{lbs./gallon})(0.37\ \text{MGD})}{1000\ \mu g/mg} = \textbf{0.12 lbs./day}$$

This permitting action is carrying forward the minimum monitoring frequency requirement of once per calendar quarter. This permitting action is revising the sample type from "grab" to "24-hour composite" to ensure samples are representative of end-of-pipe conditions.

The Town's TRE plan submitted as part of the 11/8/04 letter report satisfies the requirements of Chapter 530.5(C)(3) and Special Condition F of the 5/22/00 WDL. Based on current AWQC for copper, the Department is identifying in this permitting action that copper toxicity associated with the discharge from the Machias WWTF remains unresolved. Chapter 530.5(C)(1) states, *"the Department shall establish appropriate discharge prohibitions, effluent limits and monitoring requirements in waste discharge licenses as needed to control the level of toxic pollutants in surface waters."* In addition to establishing effluent concentration and mass limits for copper, Special Condition M, *Copper Toxicity Reduction Reports*, of this permitting action requires the Town to submit annual progress reports to the Department, for review and comment, that identify efforts to reduce the effluent levels of copper in the discharge, such as those provided in Olver Associates, Inc.'s 11/8/04 TRE letter report (excluding negotiation of effluent limits based on proposed changes to AWQC).

7. DISPOSAL OF SEPTAGE WASTE IN WASTE WATER TREATMENT FACILITY

Beginning on the effective date of this permit and lasting through the successful installation and start-up of the proposed aeration system upgrade, this permitting action is carrying forward authorization to receive and introduce into the treatment process or solids handling or treatment plant process up to a maximum of 1,500 gallons per day of septage. Beginning upon completion of the aeration system upgrade and lasting through permit expiration, this permitting action authorizes the Town to receive and introduce into the treatment process or solids handling or treatment plant process up to a maximum of 2,000 gallons per day of septage.

8. DISCHARGE IMPACT ON RECEIVING WATER QUALITY

The Department acknowledges that the elimination of the two (2) remaining CSOs in the collection system is a costly long-term project. As the Machias WWTF and the sewer collection system is upgraded and maintained in according to the CSO Master Plan and Nine Minimum Controls, there should be reductions in the frequency and volume of CSO activities and, over time, improvement in the quality of the wastewater discharged to the receiving waters.

As permitted, the Department has determined the existing water uses will be maintained and protected and the discharge will not cause or contribute to the failure of the water body to meet standards for Class SB waters.

9. PUBLIC COMMENTS

Public notice of this application was made in the *Machias Valley News Observer* newspaper on or about March 23, 2005. The Department receives public comments on an application until the date a final agency action is taken on the application. Those persons receiving copies of draft permits shall have at least 30 days in which to submit comments on the draft or to request a public hearing, pursuant to Chapter 522 of the Department's rules.

10. DEPARTMENT CONTACTS

Additional information concerning this permitting action may be obtained from, and written comments sent to:

William F. Hinkel
Division of Water Resource Regulation
Bureau of Land & Water Quality
Department of Environmental Protection
17 State House Station
Augusta, Maine 04333-0017 Telephone: (207) 287-7659

11. RESPONSE TO COMMENTS

During the period of June 28, 2005 through July 28, 2005, the Department solicited comments on the proposed draft Maine Pollutant Discharge Elimination System Permit to be issued to the Town of Machias for the proposed discharges. The Department received one significant comment from the National Marine Fisheries Service (NMFS) in a letter dated August 23, 2005.

Comment #1: The NMFS commented that the improvements to receiving water quality resulting from CSO abatement projects are not known at this time and will occur gradually over a three year period. As such, the NMFS concluded that the agency is unable to concur with the Department's finding that the discharges as permitted will not have more than a minor detrimental effect on Atlantic salmon, a species listed as endangered by the NMFS and U.S. Fish and Wildlife Service. The NMFS requested that the Department impose a condition requiring year-round WET and chemical-specific testing of CSO discharges from the Machias Wastewater Treatment Facility, and requested results of monitoring along

11. RESPONSE TO COMMENTS (cont'd)

with any discharge monitoring reports and CSO flow monitoring and progress reports be sent to the NMFS' field office in Old Town, Maine.

Response #1: In April 2003, the Department consulted with the NMFS regarding their concerns of potential effects to federally listed endangered anadromous fishes from CSO discharges. On April 30, 2003, the Department furnished the NMFS with an extensive packet of information, including copies of current MEPDES permits for each facility, copies of effluent compliance data for each facility, WET and chemical-specific statistical evaluations for each facility, spreadsheets with the annual volumes and frequency of occurrence of CSO discharges for each facility, and maps and aerial photographs identifying the locations of CSO points associated with each facility.

The NMFS agreed to utilize this information to identify wastewater treatment facilities or CSO discharges that may have potential for adverse impacts to endangered species and to recommend specific actions to protect the endangered fishes and their habitats. The NMFS has not recommended any specific action to ensure protection of endangered species present in the receiving waters surrounding the Town of Machias' CSO discharge points. Rather, the NMFS requested that the Department require the Town to conduct year-round WET and chemical-specific testing of CSO discharges to garner additional information on the presence and levels of pollutants in the CSO discharges.

The Town has developed and implemented a CSO Master Plan for the elimination of the remaining two CSO points associated with the Town's wastewater collection system. CSO elimination is a costly and long-term goal of the Master Plan, and the Town has made significant progress in reducing or eliminating CSO discharge events during the last five years. The Town continues to make necessary upgrades to the treatment system and sewer collections system to reduce the frequency and volume of CSO discharges. As the Machias WWTF and the sewer collection system are upgraded and maintained in accordance with the CSO Master Plan and Nine Minimum Controls, there should be reductions in the frequency and volume of CSO activities and, over time, improvement in the quality of the wastewater discharged to the receiving waters and improvements in receiving water quality.

The Department concludes that the Town has and continues to comply with the requirements for CSO abatement. Due to the Town's limited municipal budget, costs associated with additional WET and chemical-specific testing on CSO discharges may reduce progress on CSO abatement projects. While the Department recognizes that water quality associated with CSO discharges is inferior to secondary treated wastewater, the Town has significantly reduced the frequency and volume of CSO discharges from historical levels. Therefore, this permitting action is not establishing a requirement to conduct WET and chemical-specific testing on CSO discharges.

Discharge monitoring reports (DMRs) associated with the secondary treated wastewater discharge and CSO volumes and frequency reports may be obtained by contacting the Department. Upon request by the NMFS, the Department will provide copies of all DMRs and other requested reports for the Machias WWTF on a mutually agreed upon frequency (for example, quarterly, semi-annual or annual basis).

ATTACHMENT A

Legend

- Wastewater_Facilities
- Wastewater_Outfalls
- Colleges and Tech Schoo
- Streams

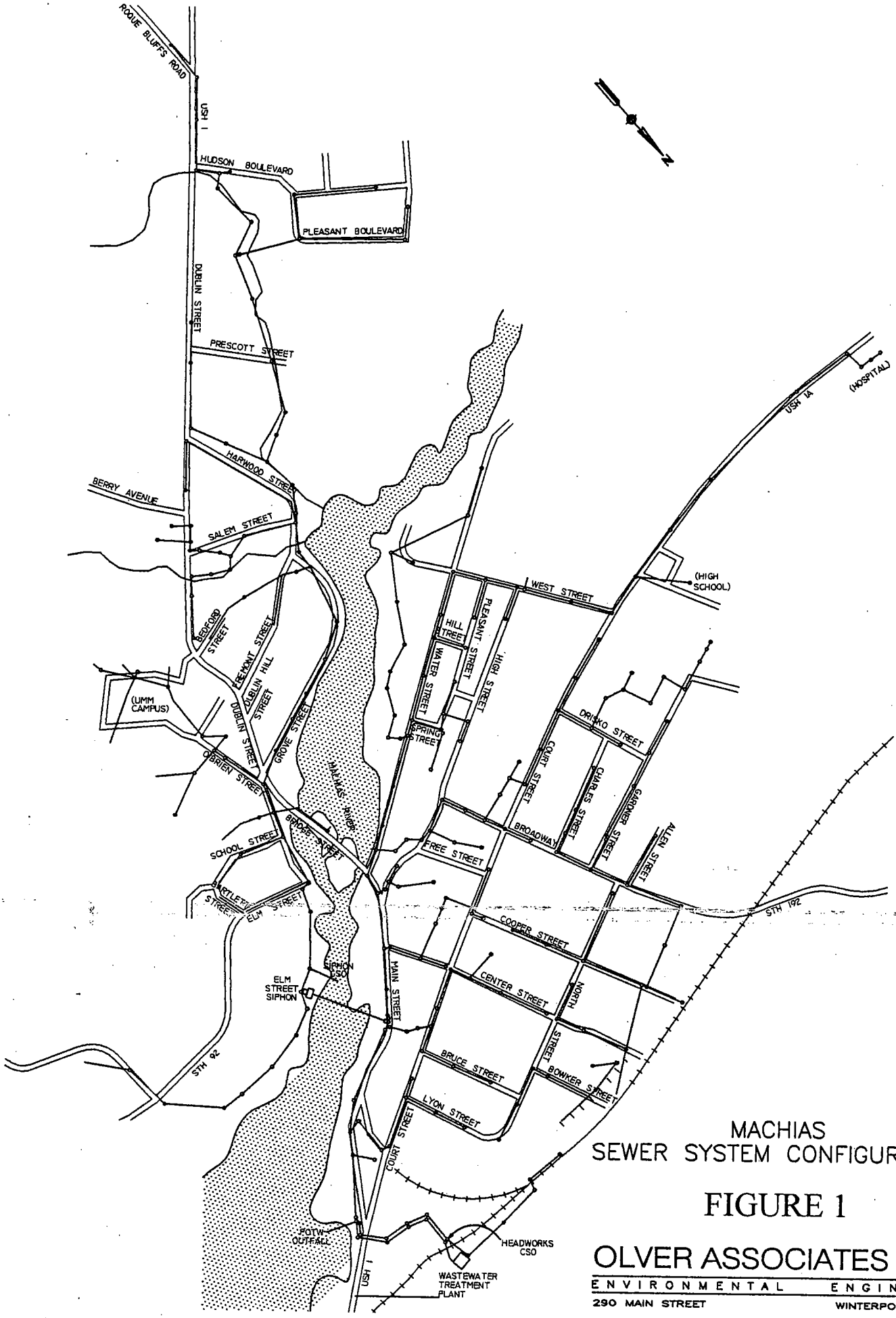
N
W E
S

0 0.15 0.3 0.6 Miles

Machias, Maine

Map created by:
Bill Hinkel
Division of Water Resource Regulation
Maine Department of Environmental Protection
August 31, 2005

DEPARTMENT OF ENVIRONMENTAL PROTECTION
STATE OF MAINE

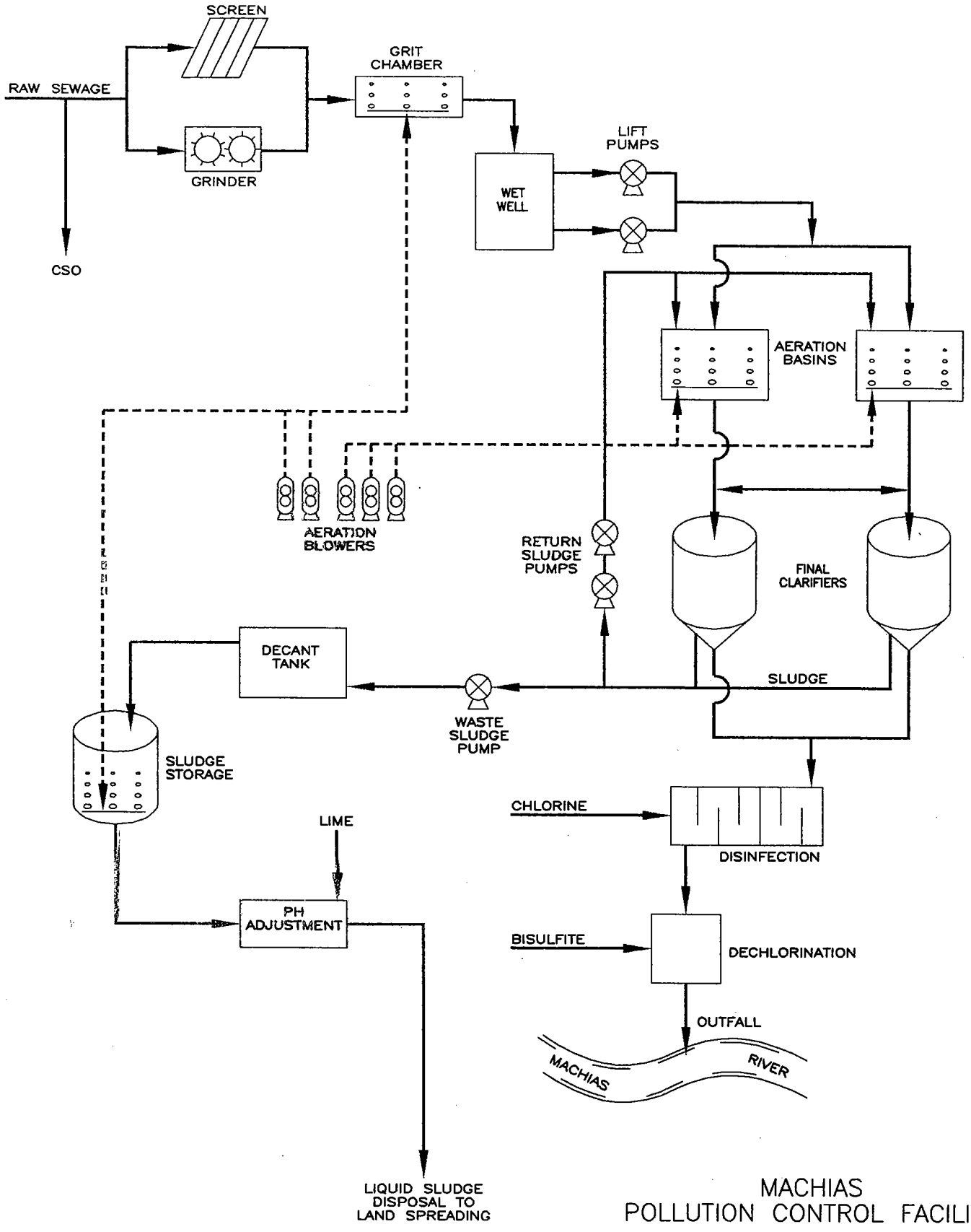


MACHIAS
SEWER SYSTEM CONFIGURATION

FIGURE 1

OLVER ASSOCIATES INC.
ENVIRONMENTAL ENGINEERS
290 MAIN STREET WINTERPORT, MAINE

ATTACHMENT B



MACHIAS
POLLUTION CONTROL FACILITY

FIGURE 2

OLVER ASSOCIATES INC.
ENVIRONMENTAL ENGINEERS
290 MAIN STREET WINTERPORT, MAINE

ATTACHMENT C

MACHIAS
MACHIAS RIVER

Flow: 0.4 MGD
Chronic dilution: 105.8:1
Acute dilution: 48.5:1

Species	Test	Test Result %	Sample Date
MYSID SHRIMP	LC50	>100	08/09/1993
SILVER SIDE	LC50	>100	08/09/1993
MYSID SHRIMP	LC50	>100	11/21/1993
SILVER SIDE	LC50	>100	11/21/1993
MYSID SHRIMP	LC50	>100	02/22/1994
SILVER SIDE	LC50	>100	02/22/1994
MYSID SHRIMP	LC50	>100	05/16/1994
SILVER SIDE	LC50	>100	05/16/1994
MYSID SHRIMP	LC50	>100	08/01/1994
SILVER SIDE	LC50	>100	08/01/1994
MYSID SHRIMP	A_NOEL	100	02/06/1995
MYSID SHRIMP	LC50	>100	02/06/1995
SILVER SIDE	A_NOEL	100	02/06/1995
SILVER SIDE	LC50	>100	02/06/1995
MYSID SHRIMP	LC50	>100	05/31/1995
MYSID SHRIMP	A_NOEL	100	04/17/1996
MYSID SHRIMP	LC50	>100	04/17/1996
SILVER SIDE	A_NOEL	100	04/17/1996
SILVER SIDE	LC50	>100	04/17/1996
MYSID SHRIMP	A_NOEL	100	04/13/1997
MYSID SHRIMP	LC50	>100	04/13/1997
SILVER SIDE	A_NOEL	100	04/13/1997
SILVER SIDE	LC50	>100	04/13/1997
MYSID SHRIMP	A_NOEL	100	04/26/1998
MYSID SHRIMP	LC50	>100	04/26/1998
SEA URCHIN	C_NOEL	50	04/26/1998
SILVER SIDE	A_NOEL	100	04/26/1998
SILVER SIDE	C_NOEL	100	04/26/1998
SILVER SIDE	LC50	>100	04/26/1998
MYSID SHRIMP	A_NOEL	100	04/11/1999
MYSID SHRIMP	LC50	>100	04/11/1999
SEA URCHIN	C_NOEL	10	04/11/1999
SILVER SIDE	A_NOEL	100	04/11/1999
SILVER SIDE	C_NOEL	25	04/11/1999
SILVER SIDE	LC50	>100	04/11/1999
MYSID SHRIMP	A_NOEL	100	03/26/2000
MYSID SHRIMP	LC50	>100	03/26/2000
SEA URCHIN	C_NOEL	25	03/26/2000
SILVER SIDE	A_NOEL	100	03/26/2000
SILVER SIDE	C_NOEL	100	03/26/2000
SILVER SIDE	LC50	>100	03/26/2000
MYSID SHRIMP	A_NOEL	43.8	03/25/2001

Species	Test	Test Result %	Sample Date
MYSID SHRIMP	LC50	>100	03/25/2001
SEA URCHIN	C_NOEL	25	03/25/2001
SILVER SIDE	A_NOEL	100	03/25/2001
SILVER SIDE	C_NOEL	100	03/25/2001
SILVER SIDE	LC50	>100	03/25/2001
MYSID SHRIMP	A_NOEL	100	03/24/2002
MYSID SHRIMP	LC50	>100	03/24/2002
SEA URCHIN	C_NOEL	100	03/24/2002
SILVER SIDE	A_NOEL	100	03/24/2002
SILVER SIDE	C_NOEL	100	03/24/2002
SILVER SIDE	LC50	>100	03/24/2002
MYSID SHRIMP	A_NOEL	100	05/27/2003
MYSID SHRIMP	LC50	>100	05/27/2003
SEA URCHIN	C_NOEL	100	05/27/2003
SILVER SIDE	A_NOEL	100	05/27/2003
SILVER SIDE	C_NOEL	100	05/27/2003
SILVER SIDE	LC50	>100	05/27/2003
MYSID SHRIMP	A_NOEL	100	03/28/2004
MYSID SHRIMP	LC50	>100	03/28/2004
SEA URCHIN	C_NOEL	100	03/28/2004
SILVER SIDE	A_NOEL	100	03/28/2004
SILVER SIDE	C_NOEL	100	03/28/2004
SILVER SIDE	LC50	>100	03/28/2004

ATTACHMENT D

Sample Date: 03/26/2000
Plant flows provided

otal Tests:	131	mon.(MGD)= 0.489
issing Compounds:	1	day(MGD)= 0.417
ests With High DL:	0	
M = 0	V = 0	A = 0
BN = 0	P = 0	other = 0

Sample Date: 03/25/2001
Plant flows provided

otal Tests:	126	mon.(MGD)= 0.452
issing Compounds:	6	day(MGD)= 0.564
ests With High DL:	0	
M = 0	V = 0	A = 0
BN = 0	P = 0	other = 0

Sample Date: 03/24/2002
Plant flows provided

otal Tests:	123	mon.(MGD)= 0.482
issing Compounds:	1	day(MGD)= 0.364
ests With High DL:	0	
M = 0	V = 0	A = 0
BN = 0	P = 0	other = 0

Sample Date: 05/27/2003
Plant flows provided

otal Tests:	132	mon.(MGD)= 0.354
issing Compounds:	0	day(MGD)= 0.422
ests With High DL:	0	
M = 0	V = 0	A = 0
BN = 0	P = 0	other = 0

Sample Date: 03/28/2004
Plant flows provided

otal Tests:	132	mon.(MGD)= 0.282
issing Compounds:	0	day(MGD)= 0.380
ests With High DL:	0	
M = 0	V = 0	A = 0
BN = 0	P = 0	other = 0

PP Data for "Hits" Only

ACHIAS
ACHIAS RIVER

OPPER
DL = 3 ug/l

Conc, ug/l	MDL	Sample Date	Date Entered
15.000000	OK	03/20/2001	03/27/2002
21.000000	OK	03/24/2002	04/24/2003
21.000000	OK	01/28/2002	03/27/2002
21.800000	OK	03/25/2001	06/25/2001
22.100000	OK	03/28/2004	07/19/2004
26.400000	OK	05/27/2003	10/30/2003
44.000000	OK	09/28/2000	01/02/2001
44.000000	OK	03/26/2000	05/30/2000
48.000000	OK	09/14/2001	03/27/2002
53.000000	OK	12/12/2000	03/27/2002